



Beyond the Bedtime: Understanding the link between Bedtime Procrastination, Self-Control and Anxiety in Young Adults

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ABSTRACT

Bedtime procrastination is a prevalent phenomenon among Indian young adults. The present study aims to understand the link between bedtime procrastination, self-control and anxiety in young adults. The total sample was of 272 respondents between the age of 18-30 years. The scales utilized were Bedtime Procrastination Scale, Brief Self-Control Scale, and Zung Self-Rating Anxiety Scale. Pearson correlation and t-test was used for the analysis of the collected data which revealed that bedtime procrastination has significant negative correlation with self-control, and significant positive correlation with anxiety. It also showed that there was no significant difference between males and females in bedtime procrastination. Results indicate that bedtime procrastination is an essential element that affects an individual's health and wellbeing. Raising awareness regarding of consequences of sleep insufficiency, making effective bedtime schedule and environmental modifications can help individuals attain healthy sleep-related behaviors and improved mental and physical well-being.

Keywords: *sleep insufficiency, bedtime procrastination, self-control, anxiety, young adults.*



INTRODUCTION

In our society today, sleep loss has been growing progressively, motivated by our 24/7 daily lifestyle, stressors and work responsibilities. It leads to long-term problems of hypertension, obesity, diabetes, anxiety and depression with ease. Factors like, irregular work timings, regular use of electronic devices (like for streaming services such as, Netflix and Amazon Prime Video, for social media platforms such as, Instagram) magnifies sleep insufficiency.

Indian society has also been found to be sleep deprived. Insufficient sleep and sleep deficiency has become an increasingly common problem among people of India (Ramrakhiani& Deshmukh, 2019). In a 2019 study, conducted by Fitbit across 18 countries, it was found that India ranked 2nd among the most sleep deprived countries. A survey done by Great Indian sleep scorecard in 2023 highlights that 87% Indians use their phone before going to bed, 78% of them are between the age of 25-34 who use social media at night. It also revealed that the percentage of people worried about their future and staying up late has risen by 38%.

The prevalence of bedtime procrastination (the behavioral component of sleep insufficiency) in young adults is growing at a fast pace and is a matter of immediate concern. The rising use of digital devices, social media like Instagram, and easily available access to entertainment content like movies, tv-series, etc. has magnified the problem of of bedtime procrastination. It has been studied in other countries like China, Japan, and Spain, etc. but it still remains heavily understudied among Indian sample. Therefore, the current study aims to address this research gap by understanding the diverse nature of bedtime procrastination among Indian young adults with a specific focus on two major elements contributing to it: self-control and anxiety.



Bedtime Procrastination

Taking the perspective of procrastination, Kroese et al. (2016) approached the behavioral element of insufficient sleep and coined the term *bedtime procrastination*. It is defined as a phenomenon in which individuals go to bed later than they have intended to without any outside factors and is associated with having insufficient capabilities for self-regulation (Kroese et al., 2014a, 2014b).

Self-Control

American Psychological Association (n.d.) defines self-control as the capacity to be in charge of one's own behavior and suppress or constrain their impulses (urges). Baumeister et al. (2007) defines self-control as the capacity to prevail over one's urges or impulses and impulsive desires in favor of actions that are consistent with their standards and long-term objectives.

Self-control plays an important part in managing bedtime procrastination and reducing its adverse consequences. Previous studies (Tangney et al., 2004; Ridder et al., 2012) highlight that people who possess low self-control have a hard time regulating relationships, adhering to routines, setting goals, upholding promises, and maintaining composure, in contrast to people with high self-control.

Anxiety

American Psychological Association (n.d.) defines anxiety as an emotion described by the distinct features of worried thoughts, feelings of tension, and physical symptoms like elevated blood pressure. Anxiety and fear are not the same, however, often they are used exchangeably. While fear is a suitable, present oriented and short-lived reaction to a clearly defined and particular threat, anxiety is more of a future-oriented, long-acting reaction on a diffuse threat. Still fear can become intensified by factors such as, low self-control and poor sleep habits, resulting in a brutal cycle of disturbances in sleep and increased anxiety.



People who are anxious a lot often procrastinate before going to bed as a coping strategy, trying to block out any worries or intrusive thoughts that might come up while they are trying to fall asleep.

Bedtime Procrastination and Self-Control

A study by Meng and Xuan (2023) pointed out that as boredom proneness increases, so does the tendency to engage in bedtime procrastination and phubbing. It was also indicated that those who frequently delay going to bed possess low level of self-control and are more likely to engage in phubbing whereas people with high level of self-control are less likely to phub. The association between proneness to boredom and phubbing was found to be partially mediated by procrastination before bedtime and self-control. Another study by Kuang (2023) suggested that participants with low self-control are more prone to procrastinate before bedtime and people who are more into phubbing will show high level of bedtime procrastination and low levels of self-control. Another research showed that there was a significant negative association between bedtime procrastination and self-control. It also indicated that the relationship between self-regulation and sleep quality was partially mediated by bedtime procrastination and as compared to males, females were more likely to have poor sleep quality and marginally higher bedtime procrastination (Ahmad et al., 2022).

Bedtime Procrastination and Anxiety

Through their study Campbell and Bridges (2023) indicated that high levels of anxiety were linked with more issues regarding sleep, and bedtime procrastination partially mediated this relationship. More sleep duration contributed to having less anxiety and bedtime procrastination and high levels of bedtime procrastination was found to have a significant relationship with high levels of anxiety. Another study indicated that procrastination related to bedtime was found to have a positive correlation with negative emotions such as anxiety and depression. It was also shown that the association of addiction to smartphone with depression and anxiety was mediated partially by bedtime procrastination (Geng et al., 2021). Similarly, research by Kiraç et al. (2021) revealed that anxiety to acquire COVID-19 has a positive impact on bedtime procrastination. It



was also seen that as compared to men, women exhibited high levels of anxiety to acquire COVID-19 and also high levels of bedtime procrastination. The study also revealed that people who go to work outside were seen to delay their bedtime less.

RATIONALE FOR THE STUDY

The current research aimed to understand the link between bedtime procrastination, self-control and anxiety in Indian young adults. Due to its possible negative impact on functioning and general well-being, bedtime procrastination is especially crucial to look at in the context of Indian culture. The fundamental mechanisms causing bedtime procrastination can be better understood by taking into account how variations in self-control affect the phenomenon. In addition, anxiety and bedtime procrastination are related - sociocultural norms in Indian culture, like family responsibilities and academic expectations, can put people under more stress, which might affect their ability to exercise self-control and make them more likely to delay going to bed. In addition, the prevalence of digital media consumption among Indian youth is an additional challenge, which may exacerbate procrastination tendencies before bed and raise anxiety levels. Hence, this study intends to make a significant contribution to academic literature and clinical interventions by investigating the links between study variables.

METHODOLOGY

Purpose

The aim of the present research is to understand the link between bedtime procrastination, self-control and anxiety among young adults.

Hypotheses

- H1: There will be no significant difference in bedtime procrastination between males and females.
- H2: There will be a negative association between bedtime procrastination and self-control in young adults.
- H3: There will be a positive association between bedtime procrastination and anxiety in young adults.



Sample

The total sample for the current research was 272 participants who lied between the ages of 18-30 years. It consisted of 39.34% males (N=107), 59.56% females (N=162) and 1.10% others (N=3) who were collected from the area of Delhi/NCR. The participants. The participants did not have any past history of or present diagnosis for sleep disorders, anxiety disorders or any other mental health disorder. The participants were also not taking any medication that would affect their sleep or anxiety levels. Convenience sampling was employed for gathering the data.

Measures

1. Bedtime Procrastination Scale (Kroese et al., 2014a, 2014b) - Bedtime Procrastination Scale (BPS) was used to assess the level of bedtime procrastination. BPS consists of 9 items, out of which, 2nd, 3rd, 7th and 9th statement of the scale are to be reverse scored. Higher scores are indicative of higher procrastination before going to bed. BPS has a good internal consistency (Cronbach's alpha = .87) and test-retest reliability (Pearson r = .79).

2. Brief Self-Control Scale (Tangney et al., 2004)- Brief Self-Control Scale (BSCS) was used to assess the level of participant's self-control. The scale includes 13 items, out of which, 2nd, 3rd, 4th, 5th, 7th, 9th, 10th, 12th and 13th statement of the scale are to be reverse scored. Higher scores are indicative of higher self-control in respondents. Similar psychometrics have been found for both Total Self-Control Scale and Brief Self-Control Scale (Cronbach alpha for total/brief = .89/.85; test-retest reliability for total/brief = .89/.87). A correlation of .92 and .93. has been observed between Brief Self Control Scale and Total Self Control.

3. Zung Self-Rating Anxiety Scale (Zung, 1971) - Zung Self-Rating Anxiety Scale is a self-administration scale which was used to assess wide range of anxiety symptoms, psychological as well as somatic. The scale includes 20 items, out of which, 5th, 9th, 13th, 17th and 19th statement of the scale are to be reverse scored. Higher scores are indicative of higher anxiety. Zung Self-Rating Anxiety Scale has a good internal consistency reliability (Cronbach's alpha = .82) and validity.



Procedure

The data for the present study was collected in offline mode through questionnaire approach. Initially time was taken to establish rapport with the participants, then information was given about the study's nature. Participants were asked to read the instructions stated on the informed consent form carefully and provide their signature if they agree to be a part of the study. Each participant was ensured that their responses and results will be kept confidential. After collection of the signed consent forms, the participants were given instructions regarding the three standardized questionnaires and were asked to fill it. Timely questions asked by the participants were clarified. Once everything was completed, it was made sure that nothing was left by the participants by examining the leaflet. The data analysis was performed by employing SPSS Version 21.0 for Windows to examine the hypotheses, t-test and correlation.

RESULTS

Table 1

Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Age	272	18	30	21.44	2.39
Bedtime	272	10	45	29.30	7.15
Procrastination					
Self-Control	272	18	59	40.21	8.61
Anxiety	272	29	95	50.30	13.39

Table 1 shows that among 272 participants, the age ranged between 18 to 30, with the mean age of 21.44 (SD=2.39), total bedtime procrastination scores ranged between 10 to 45, with a mean score of 29.30 (SD=7.15), total self-control scores ranged between 18 to 59, with a mean score of 40.21 (SD=8.61) and total anxiety scores ranged between 29 to 95, with a mean score of 50.30 (SD=13.39).

Table 2

t-test for difference in bedtime procrastination scores between males and females.

	N	Mean	SD	SE	df	t	p
Males	107	29.23	6.92	.67	267	-.91	.92
Females	162	29.31	7.28	.57			

Table 2 shows t-test for gender difference (males and females) in bedtime procrastination. The independent sample t-test showed no significant difference in bedtime procrastination between males (Mean = 29.23, SD = 6.92) and females (Mean = 29.31, SD = 7.28), respectively ($t(267) = -.91, p=.92$).

Table 3

Pearson Correlation between Bedtime procrastination and Self-Control in Young Adults.

Variable	Bedtime Procrastination	Self-Control

Bedtime Procrastination	-	-.39**
Self-Control	-.39**	-

Note. **. Correlation is significant at the 0.01 level (2-tailed). N=272

Table 3 shows correlation matrix between the study variables. A bivariate Pearson correlation showed that bedtime procrastination is significant and negatively correlated with self-control ($r = -.39, p < 0.01$). It indicates that with decrease in self-control, bedtime procrastination increases.

Table 4

Pearson Correlation between Bedtime procrastination and Anxiety in Young Adults.

Variable	Bedtime Procrastination	Anxiety
Bedtime Procrastination	-	.32**
Anxiety	.32**	-

Note. **. Correlation is significant at the 0.01 level (2-tailed). N=272

Table 4 shows correlation matrix between the study variables. A bivariate Pearson correlation showed that bedtime procrastination is significant and positively correlated with anxiety ($r = .32, p < 0.01$). It indicates that with increase in anxiety, bedtime procrastination also increases.



DISCUSSION

The aim of the current study was to understand the association between bedtime procrastination, self-control and anxiety among 272 individuals (young adults) who lie between the age range of 18 to 30 years. The first hypothesis indicated that there was no significant difference in bedtime procrastination between males and females. The finding was in contrast with previous studies which suggested that females have higher bedtime procrastination than males (Miyagawa et al., 2024; Alshammari et al., 2023; Herzog-Krzywoszanska&Krzywoszanski, 2019) and also studies where males were found to have higher bedtime procrastination than females (Dardara& Al-Makhalid, 2021). However, this finding was supported by the recent studies conducted in India. Two major studies (Andrews & Lokesh, 2024; Shukla & Andrade, 2023) revealed no significant gender difference in bedtime procrastination among Indian sample. As the present study is also based on Indian sample, the finding is consistent with the above studies. Hence, the hypothesis “There will be no significant difference in bedtime procrastination between males and females” is accepted.

The second hypothesis indicated an association between bedtime procrastination and self-control. The relationship between them was found to be significant and of negative correlation. This finding reveals that increase in self-control leads to decrease in bedtime procrastination. Both similar and somewhat related studies have been found that support the present finding such as, in a study conducted by Zhang et al. (2023) also found a negative correlation between bedtime procrastination and self-control. A study by Uygur and Bahar (2023) revealed that people with ADHD have low level of self-control, contributing to high levels of bedtime procrastination. Similarly, a study by Ling et al. (2023) also found self-control to be negatively correlated with bedtime procrastination in college students during Covid-19 pandemic. In a study by Miyagawa et al. (2024), bedtime procrastination scale (BPS) was found to have a moderate negative association with self-control among population of Japan. Some studies indirectly supported the relationship between bedtime procrastination and self-control. A relevant study done by Sirois et al. (2003) although focuses on health-related procrastination,



suggests that individuals with poor self-control are more inclined to procrastinate on activities connected to their well-being, including behaviors related to sleep. This study indirectly established an association between bedtime procrastination and self-control. Hence, the hypothesis “There will be a negative association between bedtime procrastination and self-control in young adults” is accepted.

The third hypothesis indicated an association between bedtime procrastination and anxiety. The relationship between them was found to be significant and of positive correlation. This finding reveals that increase in anxiety leads to increase in bedtime procrastination. Various studies have been found that support the present finding. In a study by Pu et al. (2022), it was found that higher bedtime procrastination was associated with higher anxiety and depression. Similarly, Meng et al. (2024) found significant positive correlation between anxiety and bedtime procrastination and Zhu et al. (2023) also found bedtime procrastination and negative emotions (depression, anxiety and stress) positively linked. Some studies indirectly supported this finding such as, a study done by Deng et al. (2022) found positive association between emotional stress related to Covid-19 and bedtime procrastination and another study revealed positive correlation between bedtime procrastination and stress (Dardara & Al-Makhalid, 2021). Hence, the hypothesis “There will be a positive association between bedtime procrastination and anxiety in young adults” is accepted.

CONCLUSION

The current research aimed to understand the link between bedtime procrastination, self-control and anxiety in Indian young adults. Firstly, the findings of the present study depicted that there was no significant difference in bedtime procrastination between males and females. Secondly, the relationship between bedtime procrastination and self-control was found to be significant and of negative correlation. This finding reveals that increase in self-control leads to decrease in bedtime procrastination. Lastly, the relationship between bedtime procrastination and anxiety was found to be significant and of positive correlation. This finding reveals that increase in anxiety leads to increase in bedtime procrastination. The study provides an insight in understanding the bedtime procrastination, self-control and anxiety among young adults. This



can help develop mental health interventions, design educational initiatives and also help plan culturally sensitive interventions.

Future studies can delve deeper into the connection between study variables by using longitudinal studies to enhance the understanding. Further research can be conducted on people from different sections of society such as adolescents, old individuals, individuals living in rural areas, individuals diagnosed with various sleep disorders (insomnia), etc. to grasp better understanding of bedtime procrastination. Studies can also focus on breaking each variable down and paying attention to different facets of the three variables for a more detailed understanding.

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